

$$N_2O = \sum_{t=1}^m E_{N_2O_t} \quad (\text{Eq. V-4})$$

Where:

N_2O = Annual process N_2O emissions from nitric acid production facility (metric tons).

$E_{N_2O_t}$ = N_2O mass emissions per year for nitric acid train "t" (metric tons).

m = Number of nitric acid trains.

§ 98.224 Monitoring and QA/QC requirements.

(a) You must conduct a new performance test and calculate a new site-specific emissions factor according to a test plan as specified in paragraphs (a)(1) through (a)(3) of this section.

(1) Conduct the performance test annually.

(2) Conduct the performance test when your nitric acid production process is changed, specifically when abatement equipment is installed.

(3) If you requested Administrator approval for an alternative method of determining N_2O concentration under § 98.223(a)(2), you must conduct the performance test if your request has not been approved by the Administrator within 150 days of the end of the reporting year in which it was submitted.

(b) You must measure the N_2O concentration during the performance test using one of the methods in paragraphs (b)(1) through (b)(3) of this section.

(1) EPA Method 320 at 40 CFR part 63, appendix A, Measurement of Vapor Phase Organic and Inorganic Emissions by Extractive Fourier Transform Infrared (FTIR) Spectroscopy.

(2) ASTM D6348-03 Standard Test Method for Determination of Gaseous Compounds by Extractive Direct Interface Fourier Transform Infrared (FTIR) Spectroscopy (incorporated by reference in § 98.7).

(3) An equivalent method, with Administrator approval.

(c) You must determine the production rate(s) (100 percent basis) from each nitric acid train during the performance test according to paragraphs (c)(1) or (c)(2) of this section.

(1) Direct measurement of production and concentration (such as using flow

meters, weigh scales, for production and concentration measurements).

(2) Existing plant procedures used for accounting purposes (i.e. dedicated tank-level and acid concentration measurements).

(d) You must conduct all performance tests in conjunction with the applicable EPA methods in 40 CFR part 60, appendices A-1 through A-4. Conduct three emissions test runs of 1 hour each. All QA/QC procedures specified in the reference test methods and any associated performance specifications apply. For each test, the facility must prepare an emission factor determination report that must include the items in paragraphs (d)(1) through (d)(3) of this section.

(1) Analysis of samples, determination of emissions, and raw data.

(2) All information and data used to derive the emissions factor(s).

(3) The production rate during each test and how it was determined.

(e) You must determine the monthly nitric acid production and the monthly nitric acid production during which N_2O abatement technology is operating from each nitric acid train according to the methods in paragraphs (c)(1) or (c)(2) of this section.

(f) You must determine the annual nitric acid production and the annual nitric acid production during which N_2O abatement technology is operating for each train by summing the respective monthly nitric acid production quantities.

§ 98.225 Procedures for estimating missing data.

A complete record of all measured parameters used in the GHG emissions calculations is required. Therefore, whenever a quality-assured value of a required parameter is unavailable, a substitute data value for the missing parameter shall be used in the calculations as specified in paragraphs (a) and (b) of this section.

(a) For each missing value of nitric acid production, the substitute data

shall be the best available estimate based on all available process data or data used for accounting purposes (such as sales records).

(b) For missing values related to the performance test, including emission factors, production rate, and N_2O concentration, you must conduct a new performance test according to the procedures in § 98.224 (a) through (d).

§ 98.226 Data reporting requirements.

In addition to the information required by § 98.3(c), each annual report must contain the information specified in paragraphs (a) through (o) of this section for each nitric acid production train.

- (a) Train identification number.
- (b) Annual process N_2O emissions from each nitric acid train (metric tons).
- (c) Annual nitric acid production from each nitric acid train (tons, 100 percent acid basis).
- (d) Annual nitric acid production from each nitric acid train during which N_2O abatement technology is operating (ton acid produced, 100 percent acid basis).
- (e) Annual nitric acid production from the nitric acid facility (tons, 100 percent acid basis).
- (f) Number of nitric acid trains.
- (g) Number of abatement technologies (if applicable).
- (h) Abatement technologies used (if applicable).
- (i) Abatement technology destruction efficiency for each abatement technology (percent destruction).
- (j) Abatement utilization factor for each abatement technology (fraction of annual production that abatement technology is operating).
- (k) Type of nitric acid process used for each nitric acid train (low, medium, high, or dual pressure).
- (l) Number of times in the reporting year that missing data procedures were followed to measure nitric acid production (months).
- (m) If you conducted a performance test and calculated a site-specific emissions factor according to § 98.223(a)(1), each annual report must also contain the information specified in paragraphs (m)(1) through (m)(7) of this section for each nitric acid production facility.

(1) Emission factor calculated for each nitric acid train (lb N_2O /ton nitric acid, 100 percent acid basis).

(2) Test method used for performance test.

(3) Production rate per test run during performance test (tons nitric acid produced/hr, 100 percent acid basis).

(4) N_2O concentration per test run during performance test (ppm N_2O).

(5) Volumetric flow rate per test run during performance test (dscf/hr).

(6) Number of test runs during performance test.

(7) Number of times in the reporting year that a performance test had to be repeated (number).

(n) If you requested Administrator approval for an alternative method of determining N_2O concentration under § 98.223(a)(2), each annual report must also contain the information specified in paragraphs (n)(1) through (n)(4) of this section for each nitric acid production facility.

- (1) Name of alternative method.
- (2) Description of alternative method.
- (3) Request date.
- (4) Approval date.
- (o) Total pounds of synthetic fertilizer produced through and total nitrogen contained in that fertilizer.

§ 98.227 Records that must be retained.

In addition to the information required by § 98.3(g), you must retain the records specified in paragraphs (a) through (g) of this section for each nitric acid production facility:

- (a) Records of significant changes to process.
- (b) Documentation of how process knowledge was used to estimate abatement technology destruction efficiency (if applicable).
- (c) Performance test reports.
- (d) Number of operating hours in the calendar year for each nitric acid train (hours).
- (e) Annual nitric acid permitted production capacity (tons).
- (f) Measurements, records, and calculations used to determine reported parameters.
- (g) Documentation of the procedures used to ensure the accuracy of the measurements of all reported parameters, including but not limited to,